

## Card Set: Always, Sometimes, or Never True?

1 $x - 6 = 6 - x$	2 $x + 6 = y + 6$
3 $\frac{x}{6} = \frac{6}{x}$	4 $6 + 2x = 8x$
5 $2(x - 3) = 2x - 3$	6 $2(x + 3) = 2x + 6$
7 $\frac{x + 6}{2} = x + 3$	8 $x^2 = 2x$
9 $(x + 3)^2 = x^2 + 3^2$	10 $(x - 6)^2 = (6 - x)^2$
11 $(3x)^2 = 9x^2$	12 $x^2 - 1 = (x + 1)(x - 1)$
13 $x^2 + 6 = 0$	14 $(x + 1)(x + 4) = x^2 + 14$

# Equations and Identities

1. Write down an example of an equation that has:

(a) One solution.

(b) Two solutions.

(c) An infinite number of solutions.

(d) No solutions.

2. For each of the following statements, indicate whether it is 'Always true', 'Never true' or 'Sometimes true'. Circle the correct answer. If you choose 'Sometimes true' then state on the line below when it is true. The first one is done for you as an example.

$x + 2 = 3$	Always true It is true when $x = 1$ .	Never true	Sometimes true
$x - 12 = x + 30$	Always true It is true when	Never true	Sometimes true
$2(x + 6) = 2x + 12$	Always true It is true when	Never true	Sometimes true
$3(x - 2) = 3x - 2$	Always true It is true when	Never true	Sometimes true
$(x + 4)^2 = x^2 + 4^2$	Always true It is true when	Never true	Sometimes true
$x^2 + 4 = 0$	Always true It is true when	Never true	Sometimes true

3. Which of the equations in question 2 are also identities?

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In your own words, explain what is meant by an identity.

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